

WHAT IS CLAIMED IS:

1. A digital data recording and reproducing system comprising:
 - a receiver for receiving transmitted digital data including a plurality of multiplexed programs consisting of video, audio, data and so forth which are subjected to compression;
 - a program selector for selecting a program to be recorded from among the plurality of multiplexed programs in response to an instruction from a user;
 - 10 a recorder for storing digital data of the program selected by said program selector, and for reproducing recorded digital data; and
 - a decoder for decoding digital data reproduced by said recorder to restore the selected program.
- 15 2. The digital data recording and reproducing system according to claim 1, wherein said receiver and said decoder are included in a set-top box, and said program selector and said recorder are included in a digital VTR.
- 20 3. The digital data recording and reproducing system according to claim 1, wherein said receiver, said decoder and said program selector are included in a set-top box, and said recorder consists of a digital VTR.
- 25 4. A digital data recording and reproducing system comprising:
 - a receiver for receiving transmitted digital data including a plurality of multiplexed programs consisting of video, audio, data and so forth which are subjected to compression;

- a recorder for storing received digital data, and for reproducing recorded digital data;
- a decoder for decoding digital data reproduced by said recorder to restore the programs; and
- 5 a discontinuity detector for detecting a discontinuity between the programs while said decoder is decoding the compressed digital data of the programs,
- wherein said discontinuity detector restarts said decoder upon detecting the discontinuity between the programs.
- 10 5. The digital data recording and reproducing system according to claim 4, wherein said discontinuity detector detects the discontinuity between the programs by using information specified in IEC/ISO 13818.
- 15 6. The digital data recording and reproducing system according to claim 5, wherein said discontinuity detector detects the discontinuity between the programs by using program_number specified in ISO/IEC 13818 as information for indicating a number of each of the programs.
- 20 7. The digital data recording and reproducing system according to claim 5, wherein said discontinuity detector utilizes a continuity_counter that is specified in ISO/IEC 13818 and increments with each transport packet having a corresponding PID (Packet Identification) in a transport packet layer, and detects the discontinuity between the programs in response to a change in the increment of the continuity_counter.
- 25 8. The digital data recording and reproducing system according

- to claim 5, wherein said discontinuity detector utilizes a Decoding Time Stamp specified in ISO/IEC 13818 for indicating a time when each access unit is to be decoded, and detects the discontinuity between the programs in response to a time
- 5 difference between the Decoding Time Stamp.
9. The digital data recording and reproducing system according to claim 5, wherein said discontinuity detector utilizes a vbv_delay in a picture header, and detects the discontinuity
- 10 between the programs by comparing an amount of data to be stored in a buffer calculated from the vbv_delay with an amount of data of the program actually stored in the buffer before decoding.
10. The digital data recording and reproducing system
- 15 according to claim 5, wherein said discontinuity detector utilizes at least two of a program_number, a continuity_counter, Decoding Time Stamp and a vbv_delay in a picture header, which are specified in ISO/IEC 13818 for indicating a number of each program, for incrementing with each transport packet with a
- 20 corresponding PID in a transport packet layer, for decoding time of each access unit and for indicating an amount of time a picture header should reside in a VBV buffer before decoding, respectively.
- 25 11. The digital data recording and reproducing system according to claim 4, further comprising a program switching signal addition section for recording, when a program to be stored is switched in response to a user instruction, not only the program itself, but also a program switching signal
- 30 indicating the program switching, wherein said discontinuity

detector decides that the program discontinuity takes place when it detects the program switching signal.

12. The digital data recording and reproducing system
5 according to claim 4, wherein said discontinuity detector
outputs fixed data when detecting the discontinuity between the
programs.